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## Comparative analysis of university and high school students' attitudes towards the idea of organ donation from deceased patients

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### Abstract

The transplantology is a branch of medicine, which has recently developed significantly. Nevertheless, despite a constant need for organs for transplantations, there is still no increase in supply for them. According to the Polish data, in 2018, only 629 new potential organ donors were registered in total and only 500 of them became so-called real donors. This data should provoke programmes to be created which would raise awareness of this problem. In the article, the results of the survey concerning university and high school students' attitudes towards this issue were contained. As it turns out, not only young society's attitude, but also its awareness of the organ transplantations should be taken care of.

**Keywords:** transplantology, survey, organ donation

## **Introduction**

Transplantology is defined as a branch of medicine, a science concerning cells, tissues or organs transplanting [1]. Nowadays, there is a constant need for organs for transplantation with too little supply. In 2018, in Poland, 629 organ donors were registered in total (that is, people with a begun (...) or completed brain death diagnosis procedure, without medical contraindications to organ donation"), with exactly 500 real donors recorded (those from whom at least one organ was destined for the transplantation") [2,3]. As it turns out, in 2018, on the National List of the People Waiting for Transplantation monthly, there were names of, averaging, 1897 people [2], excluding persons who were awaiting transplants of the lens of the eye and upper limb. Taking into account also such persons in the calculations, the average monthly number waiting for transplantation would be almost three times as high [3].

Despite the constant development of medicine, growing trust in this branch of science from the part of the society and constant improvement of organ transplantation techniques, this subject still raises a lot of controversy, not only on purely medical but also ethical grounds [5]. Both the representatives of medical services and the society itself, unrelated to them, often notice many doubts connected with transplantation in the form of the moment of death and its definition, the integrity of the human body and respect for it after the moment of death and the issues of the donor's consent for transplantation during his life or after it [6]. The basic document that is supposed to dispel the doubts related to the discussed topic is the Convention for the protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine: Convention on Human Rights and Biomedicine, or, more precisely, its chapter VI 'Organ and tissue removal from living donors for transplantation purposes'. The records contained therein are to ensure that 'removal of organs or tissue from a living person for transplantation purposes may be carried out solely for the therapeutic benefit of the recipient and where there is no suitable organ or tissue available from a deceased person and no other alternative therapeutic method of comparable effectiveness.' [7]. Despite the existence of appropriate regulations ensuring the dignity, proper treatment of the human body after its death and the ethical nature of the procedure, Polish society is struggling with doubts arising from cultural factors (in the form of the influence of religiosity and worldview), the approach of medical personnel (often connected with inability to inform about the possibility of organ donation), lack of medical knowledge of the relatives (in particular regarding the death of the brain) and also stress and shock associated with the death of a relative and the fear of violating the unity of his body [8].

Doubts related to organ donation may be an expression of the need to carry out information campaigns on this subject [9], among young people in particular, who also undoubtedly will experience their relative's death and dilemmas associated with it in the near or distant future.

## **Aim**

The aim of the study was to compare the attitudes of high school students and secondary school students towards the idea of organ transplantation from the deceased. Next objective was to analyze the awareness of both groups regarding the current legal situation in Poland.

## **Materials and methods**

The research was carried out in October and November 2018 among students from all over Poland and high school students from the Lublin province. The study was carried out using the diagnostic survey method, and an online survey of own construction was used as the research tool. It consisted of 16 questions and it was prepared based on CBOS data [10] and literature [11, 12, 13]. The questionnaire was filled out by students and pupils

anonymously, participation in it was due to the will of the person. A total of 320 completed surveys were collected, of which 163 from students and 157 from Lublin high schools pupils. Among the surveyed students, women (77.9%) were significantly more numerous than men (22.1%), in case of high school students, the proportions were similar - 77.7% of women and 22.3% of men. 74.9% of students and 70.1% of high school students indicated a city as a place of residence, while, respectively, 25.1% and 19.9% - a village.

## **Results**

The first question asked to the respondents concerned their general attitude and perception of the idea of organs donation from the deceased. The vast majority of both students and pupils followed this issue - the answer "yes" (and thus "definitely yes" or "rather yes") marked 98.2% and 95.5%, respectively. One of the students expressed howls of protest against these procedures. In addition, two students and seven pupils did not express unambiguous decision, choosing the answer "hard to say".

The next question was related to the respondent himself. He was asked if he agreed that after his death, his organs would be transplanted. Answers to this question are diverse, namely 93.9% of students and 84.7% of pupils would approve. Nevertheless, there was a group of 9 students who would not know how to assume an attitude and one person would oppose. Among high school students, there was an eleven-person group with a different opinion. In addition, 13 people would object using their organs after their death.

When asked about whether the respondent had spoken with his relatives about the possible organ transplantation after death, 55.2% of students and 30.6% of high school students answered „Yes“. In addition, they were asked if they had ever heard about "declaration of will", which is filled in in order to inform relatives in a critical situation that the deceased agreed to donate his organs. 93.3% of students and 80.9% pupils responded positively. In addition, 92% of students and 79.7% of pupils would be willing to sign this statement. There were 11 persons among students and 21 among pupils who did not know what to decide in this situation. A group of eleven students and two pupils would not complete the "declaration of will".

Tab. No 1. University and high school students' general view on the issue and their knowledge of the "declaration of will" existence.

| Ordinal number | Question   | Variants of the answers   | Percentage [%], number (N) of university students   | Percentage [%], number (N) of high school pupils           |
|----------------|--|---|---|--|
| 1              | Do you think it is right to transplant organs from deceased people?  | Definitely yes<br>Rather yes<br>Rather no<br>Definitely no<br>Hard to say | 79,8 (130)<br>18,4 (30)<br>0<br>0,6 (1)<br>1,2 (2)  | 54,1 (85)<br>41,4 (65)<br>0<br>0<br>4,5 (7)                |
| 2              | Would you agree to let your organs be taken from your body after your death, in order to transplant them to others?  | Definitely yes<br>Rather yes<br>Rather no<br>Definitely no<br>Hard to say | 71,8 (117)<br>22,1 (36)<br>0,6 (1)<br>0<br>5,5 (9)  | 52,2 (82)<br>32,5 (51)<br>6,4 (10)<br>1,9 (3)<br>7 (11)    |
| 3              | Have you talked to your relatives about the possible transfer of your organs after death in order to pass them on to patients waiting for transplants?                                   | Yes<br>No   | 55,2 (90)<br>44,8 (73)                              | 30,6 (48)<br>69,4 (109)                                    |
| 4              | Have you heard about the so-called 'declaration of will', which is fulfilled in order to let the family know in a critical situation that people agree that you are going to get organs? | Yes<br>No   | 93,3 (152)<br>6,7 (11)                              | 80,9 (127)<br>19,1 (30)                                    |
| 5              | Would you be willing to sign such a statement?   | Definitely yes<br>Rather yes<br>Rather no<br>Definitely no<br>Hard to say | 63,2 (103)<br>28,8 (47)<br>1,2 (2)<br>0<br>6,7 (11) | 38,9 (61)<br>40,8 (64)<br>6,4 (10)<br>0,6 (1)<br>13,4 (21) |

In the next three questions, people were asked what they would do in the situation of the death of a close relative who had a different belief about organ transplantation: he was against, sympathetic, or had no opinion about it. In the situation when a deceased person had not minded organ transplantation, 93.8% of students and 85.3% of pupils would not oppose

this procedure. There was a group of six students and fifteen pupils who would be against it and a group of four students and eight pupils who do not have a specific opinion in this situation. In the case of the organs transplantation from a close relative whose opinion was unknown at that time, 67.5% of students and 40.1% of pupils would accept it. In this matter, 15.9% of students and 35.7% of pupils would be against. In addition, there were 27 students (16.6%) and 38 pupils (24.2%) who would not be sure about their decision. In the situation when a person who died during his life was against transplantation his organs after death, 65.7% of students and 77.1% of pupils would object to this. 16% of students and 15.9% of pupils would not mind, while 18.4% of students and 7% of pupils surveyed marked the answer "hard to say".

*Tab. No 2. University and high school students' assumptions about their decision of an organ transplantation from a deceased relative, depending on his/her opinion during lifetime*

| Ordinal number | Question  | Variants of the answers   | Percentage [%], number (N) of university students           | Percentage [%], number (N) of high school pupils              |
|----------------|---|---|---|---|
| 1              | If in the case of the death of a relative, would you object to the removal of his organs when it is known that the deceased person did not mind to donate his own organs?   | Definitely yes<br>Rather yes<br>Rather no<br>Definitely no<br>Hard to say | 3,7 (6)<br>0<br>28,2 (46)<br>65,6 (107)<br>2,5 (4)          | 2,5 (4)<br>7 (11)<br>25 (55)<br>50,3 (79)<br>5,1 (8)          |
| 2              | If in the case of the death of a relative, would you object to the removal of his organs when it is known that the deceased person did not express his thoughts about the subject and it is not known what was her opinion? | Definitely yes<br>Rather yes<br>Rather no<br>Definitely no<br>Hard to say | 4,9 (8)<br>11 (18)<br>40,5 (66)<br>27 (44)<br>16,6 (27)     | 13,4 (21)<br>22,3 (35)<br>29,3 (46)<br>10,8 (17)<br>24,2 (38) |
| 3              | In the event of the death of a close relative, would you object to the removal of his organs when it is known that the deceased person was against organ donation?  | Definitely yes<br>Rather yes<br>Rather no<br>Definitely no<br>Hard to say | 34,4 (56)<br>31,1 (51)<br>11,7 (19)<br>4,3 (7)<br>18,4 (30) | 47,8 (75)<br>29,3 (46)<br>3,8 (6)<br>12,1 (19)<br>7 (11)      |

Subsequently, the question about the moment of human death was asked. 71.2% of students and 56.7% of pupils answered that "the death is when brain is irreversibly destroyed". 14.1% of students and 26.8% of pupils think that death occurs when the human heart stops. Other people are not able to answer this question .

The next question concerned the opinion on which way of the organs transplantation is better - the one that requires consent during life, or the one in which there is no objection during life. The first idea was approved by 23,3% of students and 50,3% of pupils while the second one was accepted by 67,5% students and 36,3 of pupils. There were groups of ten students and eighteen pupils who were not able to express their opinion. People who marked the answer "none is good" (five students and three pupils) were asked about how this matter should be regulated. Examples of answers are: *'If the deceased did not object or consent, the decision should be taken by the family, but after consultation with a specialist - a doctor / psychologist, or the closest person to the deceased), entitled to be informed about his health during life.'*, *'I am inclined to "no objection in life", but it would be good if, for example, they would send letter to each person or you would have to sign a consent / objection by applying for a personal ID. However nearly everyone makes ID so it would be the easiest way to come to citizens.'*, *'Organ transplants should be automatic from everyone.'*, *'At some stage in life, e.g. turning 18, everyone should fill out a form in which they would clearly state their decision - yes or no.'*

The last question was about the knowledge of regulations of the organs transplantation in Poland . 48.5% of students and 9.6% of pupils answered correctly - no objection during life is enough. 23.3% of students and 54.8% of students think that it is necessary to express their consent before the death. . Other respondents do not know what regulations are in Poland or they marked a "hard to say" option.

Tab. No 3. University and high school students' perception of death and their assessment of the law status concerning transplantology.

| Ordinal number | Question   | Variants of the answers  | Percentage [%], number (N) of university students | Percentage [%], number (N) of high school pupils |
|----------------|--|--|---|--|
| 1              | Which statement expresses your conviction about the moment of human death?                       | Death of a human is when his heart stops.<br>Death of a human is when when his brain is destroyed irreversibly.<br>Hard to say   | 14,1 (23)<br>71,2 (116)<br>14,7 (24)              | 26,8 (42)<br>56,7 (89)<br>16,6 (26)              |
| 2              | Which of the two ways to regulate the issue of organ transplantation you find better?            | The one which requires the consent expressed during one's lifetime.<br>The one which says that no objection during lifetime is enough.<br>None is good.<br>Hard to say | 23,3 (38)<br>67,5 (110)<br>3,1 (5)<br>6,1 (10)    | 50,3 (79)<br>36,3 (57)<br>1,9 (3)<br>11,5 (18)   |
| 3              | What are the rules regarding the organ procurement in your country, according to your knowledge? | I do not know what rules are in force in Poland.<br>It is necessary to agree during one's lifetime.<br>No objection during lifetime is enough.<br>Hard to say.         | 25,2 (41)<br>23,3 (38)<br>48,5 (79)<br>3,1 (5)    | 31,2 (49)<br>54,8 (86)<br>9,6 (15)<br>4,5 (7)    |

## Discussion

Regardless of the represented level of education, the majority of people are in favor of the idea of organs transplantation from the deceased - 96% of respondents chose an answer, which shows it. These results agree with both the data collected by CBOS in the document "Attitudes towards organs transplantation" [10], as well as the data of other research works about this problem, and they were prepared on the basis of results for medical students, doctors, nurses and non-medical college students [ 14]. The data collected in the nationwide sample indicate quite a significant aversion of Poles to this idea - only 39% of the respondents opted for it [12, 14]. In addition, a similar respondents' attitude was showed in researches based on the results for the Podkarpackie Voivodeship [15]. However, young people and those with higher education are most often in favor of transplanting organs from deceased persons [16], which is the result of the education campaigns directed to the general public like "Dawca.pl" [17], the " Second Life" [18] and the "Consent to Life" campaign operating on behalf of the Ministry of Health [19]. According to the results of our own research, a large part of the respondents (around 89%) would agree to transplant their organs

after their death, which is also showed in research conducted by CBOS [10] and other works [15, 20]. It should be noted, that the percentage of high school students who answered "rather yes" or "definitely yes" on this question is lower than in the case of students (respectively: 84.7% to 93.9%). The possibility to discuss, gives the question concerning whether the respondent told his relatives about the possible his organs transplantation after his death. It turns out that among pupils of high schools, the percentage of people who answered yes is less than  $\frac{1}{3}$  of all respondents (30.6%), which is a much lower number than in the case of students (55.2%) - these results show that in society there is still a lack of information on the importance of such a conversation. It is important that doctors often have difficulties with speaking about death and asking the deceased's family about the possibility of organs transplantation [21]. Properly informing relatives by a family member and preparing for the need to make a decision (which is associated with an emotional injury after receiving information about a death [22]), would greatly facilitate the future conversation between the doctor and deceased's relatives. An expression of the will of a organs donation in case of death may be a "declaration of will". About 87% of respondents heard about it - the percentage of such people was lower in the group of high school students (80.9% of students). Similarly, a group of high school pupils who would be willing to sign such a statement was smaller than a group of students. The promoting having "statements of will" in the wallet is an important aspect in a number of information campaigns about transplantation. Its signing may be a reason to discuss with relatives to express their will and willingness to donate organs after death, or in the situation of a possible death of a family member, may provide information about the deceased's decision [23].

Regardless of the opinion of a relative during his life, respondents would know what decision to make after his death in most cases. In the majority, both students and high school pupils, would respect the death of a deceased person. However, there are small groups of people who do not know what decision to make, which can be explained by the complexity of the situation, the multiplicity of behaviors and the circumstances of death, which can never be foreseen.

In Poland, death is pronounced in the case of the death of the entire brain - currently functioning definition and guidelines are contained in the Announcement of the Minister of Health on July 17, 2007 "on the criteria and manner of finding permanent irreversible cessation of brain function" [24]. It is described there that death is dissociated - various organs and tissues may die at different times, although the basicness of the concept of death of a human being as the death of his brain with the rejection of the understanding of death as all components of his organism is emphasized. As it turns out, according to own research results, 71.2% of students and 56.7% of pupils have the conviction that human death occurs when his brain is irreversibly destroyed. This proves that a large part of society still has a wrong opinion about the human death and when it happens. However, these data are not similar to those collected by CBOS, where 44% of respondents had a similar opinion, with 49% of those who considered the cardiac arrest as the moment of human death. It is worth noting, that the criteria, as well as the set of tests to determine the technical conditions for the death statement adopted to judge death, are only contractual. Death is not determined from the point of view of natural criteria, and the death of the brain ruled on the basis of medicine is only of a formal and legal nature. It is important that the death of the organism considered in the context of the brain is embedded in the perspective of social pragmatism, which assumes that the accepted criterion brings more benefits for patients (in particular organ donors and recipients) and their families, and consequently for society and science, than natural criteria, which do not give any benefits, generate high costs in exchange for doubtful certainty and defense of values that may be considered obsolete [25].

The issue of organ transplantations from deceased people is regulated differently,



depending on the country. In some countries, organs can only be taken from people who agreed for it during their life by signing an appropriate document. In others, the organs can be taken from all those who did not express objection in the course of their lives, i.e. they did not sign in the special national register of objections (Central Register of Objections, kept by Poltransplant [22]). Legal issues concerning organ transplantations in Poland are contained in the document "Act of 1 July 2005 about collecting, storing and transplanting cells, tissues and organs" (Journal of Laws 2005 No. 169 item 1411) [26]. It was stated there that in Poland there is a rule of a "presumed consent" to organ donation after death, so no document is needed, no declaration of will, to transplant organs from a deceased person. It is important, that the opposition of a relative's family is not legally binding on the physician if the deceased donor did not express opposition during his lifetime. Nevertheless, no organs are transplanted without talking to family in practice [22]. However, it turns out that only 29.3% of all respondents (48.5% of students and 9.6% of pupils) know what regulations are in Poland regarding this issue and it is noted that there is a similar tendency among the general public. It is also observed that knowledge on this subject is greater among people with higher education, and much less with basic education [10]. Students, asked to indicate legal regulations, which in their opinion would be better (a system in which no consent would be needed, or a system in which consent would be necessary during the lifetime), mostly indicated a system that is in force in Poland (67.5%), while in the case of pupils, just over a half (50.3%) indicated as a more appropriate system, the one which presupposes the need to sign consent during the lifetime. It seems important to raise the level of education of young people regarding regulations of transplantation. Undoubtedly, high school students have or will soon experience the death of a close relative and related dilemmas. That is why it is so important to prepare young people for such situations.

## **Conclusions**

- Both university students and high school pupils are mostly in favor of the idea of organ transplants from the deceased.

In most cases, they would respect the deceased's view if they had to decide whether to take organs from him after death.

It is necessary to encourage university students as well as high school pupils to talk to their relatives and family about organ transplants.

Actions aimed at education on the legal status in Poland should be implemented, in particular among secondary school students in whom a significantly low level of knowledge on this subject is observed.

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